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RUFUS PORTER, EDITOR.

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☞See Advertisement on last page.

POETRY.

EPISTLE TO THE EDITORS.

AULD FRIENDS:

I'm gang to sing a song for thee,
Nae' strains like Byron's, this you see,
The Muses ne'er hae' smiled on me;
I ken ye'll mind it;
But common sense I hope 'twill be,
I'll try and find it.

Oh! could I sing as ithers can,
I'd tell how poor deluded man,
Sae joyous when his youth began;
Has gane estray;
O' wars an' murders in our lan',
An' mony mae.

Mankin, we ken, are brithers a'
But when ane sees anither fa'
He leaves him there, an' gaes awa'
An' heeds him not;
But others lead by dints o' law
To ruin straught.

Alake! when poortith cauld comes nigh,
Auld age an' want, wi' mony a sigh,
Nae cheerful hame, or cottage by,
Where we can rest:
An' years o' toil we yet descry,
Nae yet are past.

Caud man but measure out the air,
He'd gie to each a little share:
Perhaps a mile, in acres square,
To hald it fast,
When his was gane, should breathe nae mair
'Twould be his last.

Oh! man! what art thou doing here,
Adawn life's stream to darkly stear;
An' nae for good, but a' for year,
Ye never lack,
Ye're gane sae far, I fear, I fear,
Ye'll nae come back.

Wae is me, far aft I find,
Sae money an' sae darkly blind,
That fashion's chains are strangely blind,
A' they possess;
As if the hale o' human kind,
Ne'er wanted less.

But ither days are coming fast,
For superstition's power is past,
Frae North to South I hear the blast,
It comes to me;
That man! aye human kind at last
Shall yet be free.

MAY.

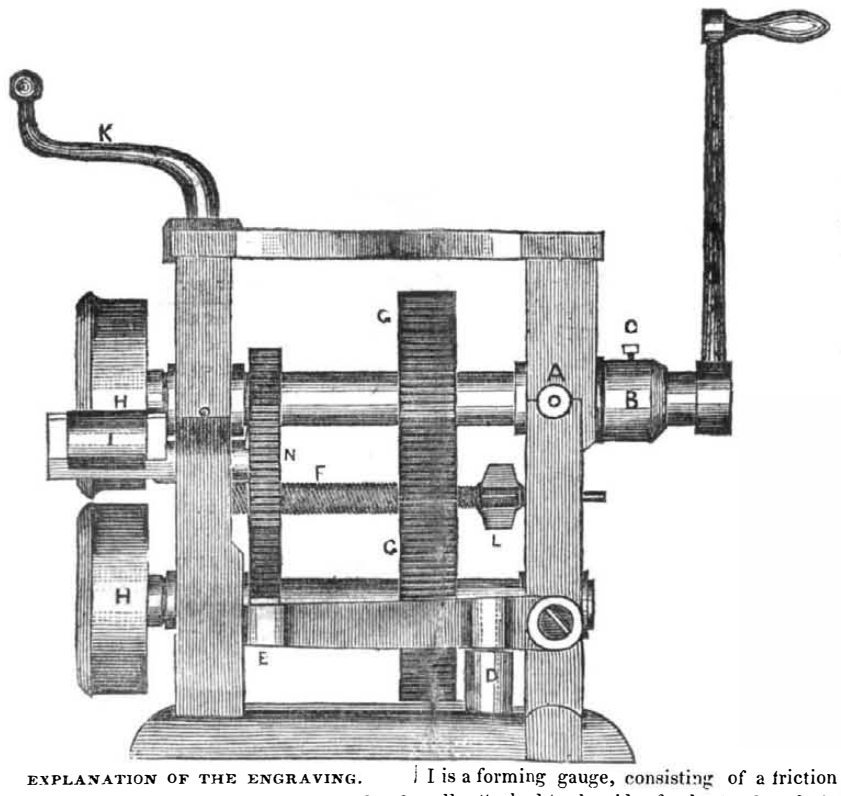
My dear Madam May! I am sorry to say
That you look rather sickly and pallid,
As if from some hole just under the pole
Your ladyship lately had sallied.

How poets will lie—(that is, all but I!)
When they talk of your being so charming,
If truth may be told, you're so backward and cold,
That I can't get along without warming!

I liken your lips to rock maple chips,
Which winter's cold drifts have laid under!
You have icicle toes and fingers like those,
And who then can love you, I wonder.

People who change their religion from reading books of controversy, are not so much converted as outwitted.

WHITNEY'S IMPROVED WIRING MACHINE.



EXPLANATION OF THE ENGRAVING.

The face plates or rolls H H, are made of cast steel of an improved form, having the journal boxes of their shafts in a cast iron frame. This frame consists of two pieces, fitted together at A, and at the top of the upright piece under K. The journal box A, has two projecting ears or bearings, (one of which is seen at A) at right angles to the shaft B H, on which ears it is supported, forming a fulcrum to the shaft B H; thus preserving the bearing of the shaft A perfect, while the end H is raised and depressed in the process of working. B is a moveable collar for adjusting the shaft and rolls longitudinally, with great nicety. C is a binding screw, for keeping the collar in place In the shaft concealed by the collar B, is a spiral groove, into which the binding screw enters. Thus, by turning the collar on the shaft, a nice longitudinal adjustment can readily be obtained. The movement of the rolls H H, is secured in the usual manner by the connecting gearing G G. F is a guage extending between the rolls, with a spring F and a thumb nut L for adjustment.—I is a forming gauge, consisting of a friction roll, attached to the side of a short rod or shaft, and having its journal bearing in the frame.—On the inner end of this shaft is a ratchet wheel N, for placing the guage in any desired position Fitted to the ratchet is a latch E for holding it in place. At D is a spring, pressing the latch into the teeth of the ratchet. In the working of the machine, the bearing at A always remains perfect; for its journal box, by turning on its ears, accommodates itself to the shaft in all positions. Again, the inclination of shaft B H is always towards H, so as to bring the collar B in contact with the box. Now, to compensate for any wear which may displace the rolls H H, as well as to adjust them to different kinds of work, the collar B is always immediately adequate. It has been the constant aim of the patentee to secure, not only the best mechanical arrangement, but to combine therewith, symmetry, strength and durabilty. All orders, by mail or otherwise, addressed to the inventor, A. W. Whitney, Woodstock, Vt., will meet with prompt attention.

Jack Tars at Vera Cruz.

You can form no idea, from any description I can give, of the ludicrous scenes that have been witnessed on shore here during the last few days. The norther caught two or three hundred seamen on shore. They had nothing to do, and no place in particular to go to.—They had been working in the water, and had left their shoes on board ship, so that all were barefooted. You have seen children let out of school after being shut up all day in the old-fashioned country day prison: their antics would bear no comparison to the shines cut up by our sailors. The country around here is covered with diminutive donkeys—the ugliest funniest looking creatures imaginable. These docile, innocent looking animals struck Jack's fancy, and afforded him infinite amusement.—You could not walk ten rods on the beach without meeting a sailor, with a big quid in his cheek and a quiet grin on his weather-beaten face, pulling with all his might at the head of a donkey, which in its turn had planted itself firmly upon its out-stretched fore-legs. Finding that neither pulling nor coaxing nor beating would effect a movement, Jack would very philosophically clap the stubborn creature in his arms and convey him onward Day before yesterday I saw four sailors, each clasping the leg of a donkey, which was raised above their heads, and upon the back of which was quietly seated an *old salt* with folded arms

Another of these hardy sons of the ocean in returning to his ship, captured a donkey, and immediately mounted him, but seating himself on the rump, the animal kicked up and came near throwing him off. A soldier told him to sit further forward on the mule and he would not kick so. The tar replied—"I'll see you blow'd first; this is mine, and I'd like to know who will stop me from riding *on the quarter deck of my own jackass.*"

A Gentle Hint.

The publisher of the "Factory Girl's Album," in a recent number, puts forth the following tender intimation to his fair patronesses: "Persons indebted for the Album must "hurry up their cakes," for the publisher is determined to have his pay, "if he chases ye a mile."

A Careful Woman.

Grant Thorburn says that he and his wife have lived together upwards of forty years, and have never lost but one tea-spoon.

A clergyman descanting on the wickedness of sleeping in church, remarked that those who indulged in such gross impropriety, sinned with their eyes open.

LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending May 15th, 1847.

To Frederick Leypoldt, of Philadelphia, Pa., for improvement in Scarificators. Patented May 15, 1847.

To Anson Atwood, of Troy, New York, for improvement in cast iron Car Wheels. Patented May 15, 1847.

To Garrettson Smith and Henry Brown, of Philadelphia, Pa., for improvement in Flue plates of Stoves. Patented May 15, 1847.

To David Culver of Hartford, Conn., for improvement in Air Heating Furnaces. Patented May 15, 1847.

To Albert Russell and Eleazer R. Walker, of Newburyport, Mass., for improvement in Ship Windlasses. Patented May 15, 1847.

To Amos Morgan, of Massillon, Ohio, for improvement in Drilling Machines. Patented May 15, 1847.

To J. W. Moyer, of Utica, New York, for improvement in Bedstead fastenings. Patented May 15, 1847.

To William Hickok, of New York, for improvement in Air Heating Furnaces. Patented May 15, 1847.

To Charles Carlisle, of Norwich, Vermont, for improvement in Horse Rakes. Patented May 15, 1847.

To Julius Hotchkiss, of Waterbury, Conn., for improvement in fastening Suspender Straps. Patented May 15, 1847. Ante-dated December 22, 1846.

To Lorenzo D. Walter, of Fort Plain, NeW York, for improvement in Drills for Dentists, &c., (having assigned his right to John Kellogg and Dayton & Kellogg.) Patented May 15, 1847.

To James Edward Wratten, of Rush, New York, for improvement in Smut Machines Patented May 15, 1847.

DESIGNS.

To James L. Jackson, of New York, for design for Fire Place Grates. Patented May 15, 1847.

To Adam Hampton, of New York, for design for Fire Place Grates. Patented May 15, 1847.

RE-ISSUE.

To John Plant, of Washington, D. C., for improvement in Hinges for Blinds, &c. Patent April 24, 1847. Re-issued May 15, 1847

A Stumper.

The following touch of the sublime was spouted forth by a western orator recently, at a war meeting:

Men of blood! friends of Washington! that old hoss, General Jackson—I want your attention, for lightning has burst upon us, and Jupiter has poured the ile of his rath down the greasy shanks of the Mexicans. Thunder has broke loose and slipped its cable, and the mighty valley of the Mississippi reverberates with the thousand-tongued hisses of Santa Anna and his smaller igna fatua that revolve around the benighted and wooden-leg pop-gun of Montezuma. Citizens and sires of the bloody grounds upon which our fathers catawampously fought, and bled, and poured out their claret free as ile, to enrich the soil over which we now hover and watch with hyena eyes—let the catamount of the inner varmint loose and prepare the chessy cat of vengeance, for the long-looked-for day has arrived; the sun that lit King David and his host across the Atlantic looks down upon the scene and drops a tear to its memory.

But hosses, I am with you as long as the stars of Uncle Sam and the stripes of his country triumphantly wave in the breeze. Whar, I say, whar is the low-lived, chicken-bred, toad-hoppin', red-mouthed mother's son of you who will not raise the beacon light of triumph, smouse the citadel of the aggressor, and press onward to liberty and glory?

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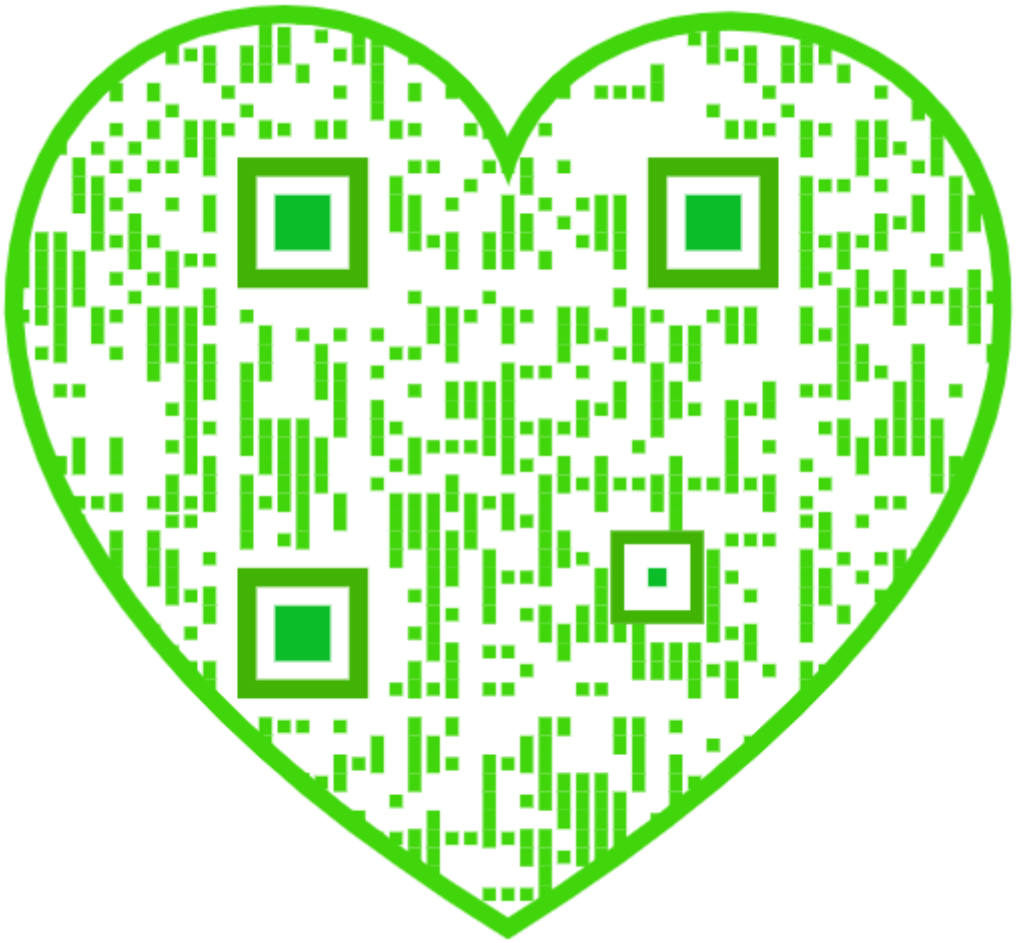

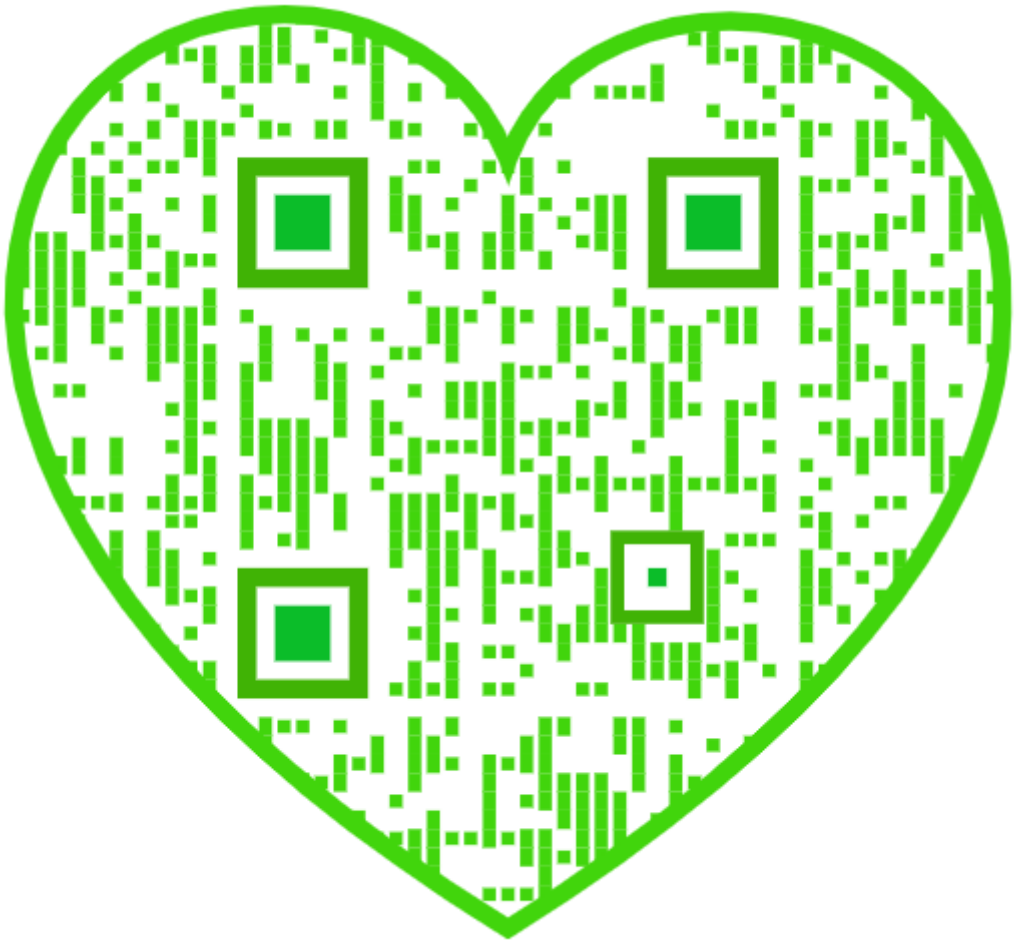

A Sorry Blank.

A celebrated writer of vaudevilles being caught recently in a shower, took refuge under a portico A very pretty person soon lifted the window, and after looking attentively at him for a moment, sent a servant out to him with an umbrella. The next day the delighted author dressed himself up to his last result of the problem of what was true and becoming, and as the umbrella was an old one, laid it aside as a souvenir, and purchasing a new one of the costliest taste, called on the lady to return her flattering loan. She received the new umbrella evidently without remarking the change, and after listening with curious gravity, to the rather pressing tenderness of the dramatist's acknowledgments, she suddenly comprehended that he was under the impression that she was enamored of him; and forthwith naively explained, that as he stood in the way of a gentleman who wished to come and see her unobserved, she had sent him the umbrella to get him off her front steps!

Boston Water Works.

More than three quarters of the excavation for the aqueduct, from Long Pond to Brookline, is completed; and the laying of the brick aqueduct is begun on several parts of the line. Three parties are now engaged in laying the iron pipes for the distribution of the water in the city, and the pipes are already laid through several streets. Preparations are in progress for the commencement of the reservoirs, and all the important works.

Grand Rapids.

The supervisors of Kent county, Michigan, by a late act of the Legislature, are incorporated for the purpose of constructing a steamboat canal around the falls of Grand River.—This measure is of great importance to the central part of the state. The locks are to admit boats 130 feet in length, and 28 feet in width. The State appropriates 25,000 acres of internal improvement land, for carrying forward the enterprise.

Legacy Lost.

In the fire of the hemp warehouse of Mr. Franklin in Maysville, Kentucky, a Mr. Brouge had stowed away $10,000 in gold which he had received from Switzerland as a legacy and which was lost. So says an exchange: but we do not see how the gold can be thus lost. It may surely be found in the ashes.

The Power of the Press.

In the year 1272, the wages of a laboring man were just three half pence per day; and at the same period, the price of a bible well written out was £30 sterling. Of course a common laborer in those days, could not have procured a bible with less than the entire earnings of thirteen years! Now, a beautifully printed copy of the same book can be purchased with the earnings of half a day!

The Quickest Trip.

The mail pilot line to Philadelphia from N. York on Saturday evening made the quickest passage ever accomplished between this city and Philadelphia. The cars arrived at Camden Ferry at half past 8, just 4 1-2 hours from New York.

Durability of Oak.

The durability of oak may be known from the fact that the throne of Edward the Confessor is 800 years old; and the oldest wooden bridge of which we have any account is of oak —and which existed 400 years before Christ.

Gold Leaf.

Dr. Black has calculated that it would take fourteen millions of films of gold, such as is on gilt wire, to make the thickness of one inch: whereas, fourteen millions of leaves of common printing paper would occupy 3-4ths of a mile in thickness.

They are making in England, a carefully prepared ruby colored glass as a substitute for the ebony keys of organs and piano fortes.

The latest method of Raising the Wind.

The Brighton (England) Herald, says there is a *lady* residing in that vicinity, well connected, and in independent circumstances, who purchases at a time four or five pounds' worth of men's shirts, collars, and other articles of the kind which she gives to a poor woman to sell, and in order to assist the sale she gives the woman a letter signed with her own name, which she is instructed to take to various persons. The letter begins thus:—"In the name of Jesus," and it then goes on to state that the bearer is a person in humble life, in distress, and that any persons purchasing the collars, which she (the lady) "has made herself," they will confer a favor upon her (the said lady.) Thus armed and instructed, the poor woman commences her trading and charitable operations. The collars, &c., which she bought at 6d., 8d., or 1s. each, she marks a price on herself. The 6d. ones are to be sold for 2s, the 8d. ones at 2s. 6d., and so on. If the woman sells above 30s. worth in a day she is paid 1s. by her patroness for her day's work, but if she sells any less number she is paid only 6d. a day, and she complains that she is not sufficiently remunerated, and this is how these facts became known.

American Iron.

The Rochester Democrat states that iron was first made in this country in 1715, in Virginia. In Orange County, New York, a furnace was erected in 1751, and 1,500 tons of pig, and 1,000 of bar, made annually. The great iron chain that crossed the Hudson during the Revolution, each link of which weighed 140 lbs. was made there. Peter Townsend made the first cannon there in 1816.

An Army of Colporteurs.

Lord Ashley and some others, says the Dublin Herald have raised near $100,000 for the employment of seven hundred Scripture readers for Ireland. This army of Colporteurs is to be immediately distributed over the country, reading the Bible and instructing the people in their houses and by the highway. A cotemporary hints that *corn-porters* would be quite as acceptable about this time.

Specie by the Ton.

We notice six coaches now in front of the Mansion House, all laden with specie, on it way from the Chicago Land Office to St. Louis. We believe the sum in the coaches amount to nearly three hundred thousand dollars.—*Ottawa (Ill.) Free Trader.*

Telegraphic.

The Directors of the New York and Buffalo Telegraphic Company, at their recent meeting in Utica, resolved to use in their operations an iron wire known as No. 10, weighing about 250 pounds to the mile. The English Companies adopt a wire called No. 7, which is much heavier and more lasting.

Trade in Mexico.

We are doing a pretty good business in Mexico. By a letter from Vera Cruz, we see that our officers at that port collected in five days duties to the amount of $100,000.

Chinese Enterprise.

The Chinese vessel *Kiying*, manned with about 60 hands, half of them Chinese and half European, sailed from Hong Kong *for England* on the 6th inst., many wishing her *shun fung shun shin*, (favorable waters.)

Keep it before the People.

The Queen of starving England is allowed for her support, $1,700,000; for Prince Albert, her husband, $133,000; and for her horses and hounds, $310,000—making in all $2,193,000.

He is happy whose circumstances suit his temper.—*Exchange.*

Yes, but he is happier who can make his temper suit his circumstances.—*N. Y. Organ.*

It is generally less difficult for a man to conform his mind to his circumstances than to conform his circumstances to his mind.

So backward is the season that the first of May was celebrated at Nicolet by planting a Maypole in the ice of the St. Lawrence. Such an event has never before occurred.

One of the trains on the London and Birmingham railroad, performs the distance of 112 miles in three hours.

Southern Eloquence.

Remarks of Dr Beekman, of the 3d District in the State Senate, on the final passage of the Codifying Commission Bill, the question being, shall the bill pass, he arose with his usual majestic gracefulness, unbuttoned his vest, thrust his right hand into the lowest depth of his breeches pocket, coughed thrice and hemmed once, and stretching forth his left hand, and in that flowing, easy style of eloquence peculiar to him, vociferated——aye!!

A Modest Editor.

The Rev. Mr. Brownly of Tenn., announcing his intention of publishing a new periodical, says: We feel competent to the task of editing and publishing a work on politics, one on religion, one on science, and another on anything you please, all at the same time!—Our genius is bounded on the east by the rising sun, on the west by the *astronomical imagination*, while the *aurora borealis* of truth lights up our path by day and night! We could say more about our abilities, and we would do so, but for our *great modesty*

The Widow of Gen. Pike.

It is stated that during the last thirty years of the life of this lady, who resided in Kentucky on the bank of the river, it has been the usual practice for all steamboats, in passing her residence to salute by firing one or more guns, or by ringing the bells

No License in Boston.

On Thursday last the Common Council of Boston, by the casting vote of the Mayor, decided to grant no license to retail spirituous liquors during the coming year.

Precocious Housekeepers.

Five children, two boys and three girls aged from 8 to 15, have been arrested in Boston for stealing furniture and opening an untenanted house on their own hook.

German Colony.

The advance guard of a colony of German emigrants, 40 in number, landed at Manitouwoc, Wis. T., on the 7th inst. The main body, consisting of about 6000, are on their way, the whole colony will occupy a county.

Change of Front.

The *American Star* at Jalapa, is printed with the type of a late Mexican paper. This is really turning the guns upon them.

The *Builder* says that to put the silver edging to muslin, which is always torn off and thrown away before converting the material to use, costs the people of England £20,000 a year.

Notwithstanding great exertions and an offered reward of $1400, the Portuguese officials have never been able to discover where a Lisbon paper, the *Espectro* is printed.

That naughty Turk, the Sultan of Turkey, has sent one thousand pounds ($5000) to the suffering Irish,

Ice is selling at Vera Cruz at 25 cents per pound. There will soon be a supply from the East.

A clergyman told an Indian he should love his enemies. "Me do love 'em," replied the latter. "What enemies do you love most?" "Rum and cider."

The Louisville Journal says: "We think it very likely that the people of the U. States will in 1848 do what the Mexicans have vainly attempted to do—*run Gen. Taylor.*

The Jerusalem artichoke, which produces about half a peck for each root planted, is strongly recommended as a substitute for the potato

About 50 dogs were recently destroyed in one night at Fall River, by being secretly poisoned.

There is in the British Museum an almanac, written on papyrus, nearly 3,000 years old, which having been used by some Egyptian of the olden time, was buried with him.

Booth and Burr have issued a prospectus for the publication of a paper at the Capital of Michigan—a place where there is not yet a house!

In the last four months, 120 factories and mills of various kinds, have been destroyed by fire in the United States. So says an exchange.

LATE FROM EUROPE.

The steamship Brittania arrived at Boston on Monday morning, 12 1-2 days from Liverpool. Before noon on the same day, the principal news was published and circulated in this and other cities. We find but few items of interest to any but merchants or politicians.

France.

The news of Gen. Taylor's victories was received with much satisfaction. Great distress continues to exist where bread is exceedingly dear, and it is feared that during the months of May and June provisions of all kinds will be dearer than they have hitherto been. Vegetation is very backward owing to the cold during the last fortnight.

The bill relative to the establishment of regular steamers between Havre and N. York, has received the Kings assent, and is now the law of the land.

Germany.

A few days ago not fewer than 2,000 emigrants sailed from Hamburg for New York.—In some parts of the country emigration is carried on almost to an alarming extent; whole villages go away enmass and entire districts become depopulated.

Portugal.

The Junta still keeps the Queen's forces at bay. The insurgents are now powerful and too wealthy to be extinguished by force—Means are being raised to buy out their hostility.

Italy.

A most diabolical plot to murder the Pope has been discovered. It was first found out by the French ambassador. He revealed the name of the conspirators to the Pope. The conspirators were detected and several persons imprisoned.

LATE FROM MEXICO.

After the battle of Cerro Gordo, Gen. Scott lost no time in following up his success, and sent forward Gen. Worth with a strong detachment, who took possession of the cities of Jalapa and Perote. At the latter place he found a Mexican Colonel who was charged with the surrender of the place with all the arms and munitions of war. None of the large guns were spiked and were found in excellent order. Ampudia, with about three thousand disorganized lancers, moved out just far enough to avoid a conflict, and proceeded on.

The steamer James L. Day, from Vera Cruz 5th inst., arrived at New Orleans. Besides the correspondence brought to the Picayune by this arrival, it is reported by passengers that the city of Mexico had ACTUALLY SURRENDERED TO GEN. SCOTT, AND THAT THE WAR WAS ENDED!

An express reached Vera Cruz a moment before the sailing of the James L. Day, with information that a deputation had come down from the city of Mexico to request Gen. Scott to take the capital under his protection. This news is almost incredible; but when it is remembered that the system of guerilla warfare has been adopted by Mexico, and that the banditti who engage in this service are as dangerous to their own countrymen as to the enemy, the report gains some probability.

The whereabouts of Santa Anna is somewhat problematical. The last authentic intelligence located him at Orizaba with a miscellaneous command of 3,000. Subsequent rumors report him as having gone South to recruit his ranks in Oajaca. It is certain that he has not shown himself at the capital since his defeat. Gen. Scott's intention was to push forward at once, thus cutting off all communication with Vera Cruz, and depending upon the country for all supplies. Gen. Worth is gathering a quantity of grain and has got bakeries in operation, anticipating the interruption of communication with Vera Cruz.

The Mexican accounts of the battle of Cerro Gordo say that Santa Anna sustained himself with 6000 against 14,000, and finally being entirely surrounded, cut his way through the Yankees with a column of the fourth infantry

A Cotton Factory is in course of operation in Troup County, Ga. It is to work 1,600 spindles, and 20 looms.

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ONWARD.

Onward! onward! is the watchward
For the soul in trial's hour,
When the chains of darkness bind us,
And the clouds of sorrow lower.
Follow, follow up the future:
'Tis a mighty enterprise:
Now or never! strike the iron,
Ere the golden moment flies.

Onward! onward! ye who weary,
Faint, and linger by the way;
From the spirits slumber waken,
Ere the raven lock turns gray.
Will enfeebled powers avail you
Care and conflict to endure?
Onward! onward, take fresh courage,
And the victor's palm is sure.

Onward! onward! ye who cherish
High and flattering hopes of fame,
Let the pointed shaft be driven
With a strong and fixed aim.
There are foemen pressing onward—
There are enemies within;
Onward! onward! for the struggle,
And the deadly conquest win.

Onward! onward! time is swifter
Than the swiftest in the race.
He is near you—with you—past you—
Who hath found his resting place!
Onward! onward—ever onward—
Earth-worn pilgrim, child of clay,
Through turmoil, distrust and anguish,
To the pure and perfect day.

The Fortunes of Inventors.

(*Concluded from No.* 34.)

Now I have long had it in my mind to improve the oil press by making an addition of a small cylinder with a piston of 30 inch stroke connected with the ordinary main cylinder, and standing upright, and weighted with the same weight per square inch: so that there being a connection with the main cylinder and a valve with its stem passing through a stuffing box, and with a lever power, the valve could be closed when the force pump had done its work, by filling the cylinder and also the safety cylinder with water: and the pressure being ended, the operator could close the upper valve and let off the water below by the discharge valve, and the main pistons being run back, the oil cake could be taken out and new filling put in.

(Our respected correspondent here proceeds to describe in full the construction and operation of his projected improvements in the double acting oil press, with a drawing and letters of reference; and we had directed one of our artists to furnish an engraving thereof. But before it was commenced we received another communication from the author, stating that he had just returned from a brief tour in the country, during which he had discovered that he had already been anticipated in several of the most essential points in his recent improvements, and that they are already in operation at several oil mills which he visited.—He was moreover informed that certain other points in his projected improvements, had already been adopted in New Jersey. He then proceeds.) Now, sir, I do not want to claim anything of the invention of others, and tho' I believe they are indebted to me for the first idea or hint on the subject. I cannot prove it or connect myself with it now; therefore I fear I must leave others to enjoy it. Some two or three years ago I was in Trenton, N. J. and collected my patent from a mill there and they told me that they had made some efforts to attach a reserve tube, connected with a pipe, or by a pipe, to the main press cylinder, with a view only to get a steady pressure when the pump was not going, but as I understood them, they did not succeed, but had abandoned it. I saw where they had failed, and afterwards suggested a plan that I intended to try, and mentioned my plan, then intending to have gone on with it, but was prevented for the time. The reason of my writing to you, was, or rather is, that you may, if in time, expunge or so modify the part of your notice relating to this improvement that it may suit the altered circumstances of the case. For although I believe myself in reality the inventor, and although I do not believe they ever have made all, or near all, the most valuable application of this addition or combined all of its advantages, I do not wish, even in appearance, to appropriate the inventions of others; for I have felt myself the hard effects arising from such a system of morality, and am of the opinion of "M'Fingal," that "no man e'er felt the halter draw," &c. I give up, therefore, the more readily my intended improvements, and turn my attention to other things. I have much that I want to consult you upon and some things that I want the use of your columns, or rather a small space in each, "continued" perhaps through several numbers. It is in regard to a Horse Power. There is much misapprehension in the public mind with regard to the endless chain horse power and its improvements, as patented by me.—There have been many one horse powers got up, all after my invention, being different modifications, and most of them utterly worthless from their complicated construction, and running down after a short time. They have been confounded with mine, and mine condemned because it bore some little resemblance to theirs. Mine has not been well understood, even by mechanics, who have failed to build them successfully by draft, though very simple. But for the want of the most common knowledge of mechanical science, they have failed to make them go. My horse power is decidedly the most simple, least friction and most powerful and durable of any yet known. The great difficulty in any machine of this nature is the many working joints and consequent friction. I want to give a general description as short and comprehensive as possible of the machine and its different uses, and and the several machines that are attached to them perhaps, with a sketch or two something like some of those you have published of lock and door work, or Austin's machine, only not half so long; and if I have any such thing as you are accustomed to charge for, I will pay your charges for sketches of engraving, &c.

(Our correspondent here proceeds to introduce improvements or plans of operation in another branch of business, but which it may not be for his interest to have published till he has perfected his plans by experiments. We would improve this occasion, however, to say to him, that if his invention in this line has not been already anticipated—which is not improbable—there is so much competition in the business, and the market so crowded with the article, that we cannot see much encouragement for him to proceed. Of the various subjects in his mind's museum, he might evidently select one or more which would be more promising. The correspondence will probably be continued.

Complete Union.

There is but one point in which Christian union can be complete, and that is in Christ. There may be partial union on some ground less than this. Thus the friend of the slave, or the friends of peace, may unite in one principle, and be heaven-wide apart on all others. Thus those who hold the same doctrinal sentiments may have a kind of union, and seem to harmonize; while yet they have but one thing in sympathy. But souls filled with the love of Christ, have in him a complete union.—Nothing less than this furnishes a medium for perfect union. Christ is the fullness of salvation. He is the true Magnet that draws all souls together. His love is not addressed to one of the social principles, leaving all the rest uninfluenced, it enters into, and prevades the whole being. It creates a perfect brotherhood, a perfect oneness, complete in all respects, and enduring forever. For this union the blessed Saviour prayed in that night of his dreadful agony, "That they all may be one, as Thou Father art in me, and I in thee, that they also may be one in us." The union of the Father and of the Son is complete. And here the Saviour prays that we may be joined in heart *as* he and the Father are joined. This is a union that reaches to the finest fibre of the being, and brings all into harmony with the very heart of God, because it includes all the principles of true holiness.

A son of the late *Fakir of Ava* has recently made his appearance in Philadelphia as a juggler, and it is said that he is not a whit inferior to his father, who was one of the most successful of his class that we have ever seen.

THE WEATHER, &c.

WEDNESDAY, MAY 12th.

	HOURS, A. M.									HOURS, P. M.									
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
Therm.	—	57	57	59	60	62½	64½	63	63	60	62	62½	61½	61½	60½	60	57	55	54
Wires,	—	58	58	61	61½	64	66	65	65	61	63	63½	63	63	62	61	58	56	55
THURSDAY, 13th.																			
Therm.	51	50	51	52	55	56	57½	60	62	63½	64	65	63	60	58	57½	55	54	52
Wires,	52	51	52½	53½	56	57½	59½	62	64	65½	66	67	65	62	60	59½	56	55	53½
																			[*Equilibrium*
FRIDAY, 14th																			
Therm.	52	51	51	51	53	55	57	59	59½	62½	—	63	63	62	60½	58½	57	—	54½
Wires,	54	53	53	53	54	56	58	60	61	64	—	65	64	64	62	60	59	—	56
	[*Equilibrium ended.*																		
SATURDAY, 15th.																			
Therm.	51	51	51	57½	61	61½	63	65	66	68	69	67	67	67	65	63	59	56½	53
Wires,	53	53	53	60	63½	65	65	67	68	70	71	69	69	69	67	65	61	58½	55
SUNDAY, 16th.																			
Therm.	48	50	49	56	59½	60½	63	—	68	69	70½	68	65	62½	61	60	56½	55	54½
Wires,	50	53	51	59	61½	63	65½	—	69	71	73	70	67	65	62	61	58	56½	56½
MONDAY, 17th.																			
Therm.	49	49	50	57	60	61	62	64	66	68	69	69	67½	63½	60	57½	55	53½	52
Wires,	51	51	52	58	62	63½	64	66	67½	69	70½	70	70	65½	62	59½	57	54½	53½
TUESDAY, 18th.																			
Therm	49	49	49	55½	60	63½	65	67½	69½	*74	71½	71½	67	64½	61½	60	59	59	58
Wires,	50	50	51	57½	62	66½	67	68½	70	*74	72	72	69	66½	*63½	61½	61	60½	60

*Approximation. *A little rain.*

REMARKS.

I have a letter from one of my correspondents dated May 4, from the mountains of south-western Virginia, in which he says—"In April about one inch of rain fell before the 29th, when a thunder cloud with heavy rain passed by, and again on the 1st and 2d of May." It will be seen by reference to my published record of these days in the Scientific American of May 8, that my wires truly indicated, and this account when taken in connection with my notice in the Scientific American of the 15th inst. of a snow storm in Otsego County on the 2d, and at Bangor, Maine, on the 3rd inst. furnish two of the testimonies, the snow was the off-spring of the lightning, and all that now remains to be heard from is the convulsion which put the lightning in motion. The mountain in south-western Virginia, where my correspondents' letter is dated, is 1782 feet above the level of the sea—the lightning storm therefore had a great elevation. The temperture of the mornings of May 1847, compared with that of the corresponding mornings of May 1846,—show a great decrease of temperature; the mornings of May 1847, being 6½ degrees cooler, on an average for 17 mornings from May 1 to May 17, inclusive. The earth has been in a different state at my place of observation this year compared with last. The atmosphere for the last few days has absorbed water extensively, and I have been obliged for the first time for six months to add water to the basin in which my meteoric, magnetic and electric wires terminate. A flat bottom iron vessel with a broad surface out of the reach of the suns' rays has evaporated one inch of water in 12 days. The pointing of one of my wires has changed to the north east. Since writing the foregoing I have received another letter from my correspondent upon the mountains of Virginia, saying that frost had been experienced there four mornings the present month. It will be seen by my record that my wires and thermometer have approximated, this day at 1 P. M. the thermometer at 74, and the wires at 74 on the first day of April, the date of the earthquake at Limington, thermometer in the morning at 6 o'clock 23, and wires 45, and at 2 P. M. of the day succeeding that earthquake, thermometer 49, wires 57; the evening of the 27th of April when the earthquake took place at Mt. Morris, thermometer 48; wires 56 1-2 at 10 P. M. On the 3d of Feb at 8 P. M., at the time the lightning storm was passing over, thermometer 38; wires 47; and the 2d of that month, the date of the earthquake at Deerfield—thermometer 35; wires 50 at 1 P. M. The reader will thus see that while the wires on the 2d of February were the same as this morning at 4 o'clock, the thermometer on that day was 14 degrees lower than this morning. I have before remarked that the wires are connected with the pores of living vegetation which is now in a state of activity, and with water which the atmosphere is rapidly taking up. Approximations are taking the place of Equilibriations. During the great rain storm on the 27th of February at 7 A. M., thermometer at 33; wires 50—thus the wires were then the same as this morning, while the thermometer was 17 degrees lower. In my last record published in the Scientific American of May 15, I made an error in transposing the figures of the wires at 8 P. M. on the 11th, the wires were 65; and the thermometer 63; instead of thermometer being 65 and wires 63—I have never yet known the wires lower than the thermometer.

E. MERIAM.

Brooklyn Heights, May 18, 1857.

CAMBRIDGE, Ohio, May 3, 1847.

Mr. Editor.

There are one or two things which I would like to know, and I expect many of your subscribers would like the same. That is—by what process the gilding or laquer is put on the Yankee brass clocks, and many other things made of brass?

And the next question I would ask, is the manner of plating carriage irons with brass or silver? These eastern chaps have a slight of hand way of working every thing, which puzzles us western folks. I hope it will be convenient for you to answer my questions, and much oblige a subscriber. C. L. M.

We could readily give the intelligence required above, but are seriously apprehensive that the precedent would be a dangerous one; for it is much easier to ask than to give instruction in the arts, and we may be beset by hundreds of mechanics and apprentices for intelligence which even their bosses have not the capacity to give. We will just accommodate our correspondent in a brief manner this time however, but cannot hold ourselves bound to confer similar favors on all who may apply. The best laquer for brass is made by dissolving seed-lac in alcohol. The seed-lac for this purpose should be first pulverized, and put into a glass flask or bottle, in the proportion of an ounce of lac to a pint of spirits, and placed in a warm situation, stirring it occasionally till dissolved The color of the solution may be improved by the addition of four pwts of ground turmeric and two pwts of red saunders, to steep while the lac is being dissolved. Strain off the solution through fine flannel, and it is ready for use. When this is to be applied, the solution is warmed, and the articles to be laquered are also heated to about 150 degrees; the solution is then brushed over them quickly with a hair brush or pencil, with care that the fluid is evenly laid. It dries instantly, and nothing more is required. But if the first coat appears not heavy enough, it may be repeated.

With regard to silver plating, the best method decidedly, both with regard to brilliancy and durability, is by the galvanic process, which has already been given in full in former numbers; but for the benefit of new subscribers it will probably be repeated. Plating with brass will be given under its proper head next week.

Rara Avis.

A white pelican was shot on Burlington beach a few days since. Its wings measured 7 feet nine inches from tip to tip—from the point of its bill to the end of the tail it measured four feet ten inches—the bill itself, to the opening of the mouth, was fourteen inches—the perpendicular height of the bird was two feet eight inches. This is the first bird of the kind that we have ever heard of being shot in North America.

The whole amount of the annual products of the United States is about one thousand millions of dollars.

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NEW INVENTIONS.

New Corn Drying Machine.

We have received from G. Torry Esq., of Kalamazoo, Mich., a description of the best apparatus we have yet heard of for drying corn, grain, &c. With regard to the rapidity of its operation, there appears to be no definable limits. It consists of a series of long sections of tube, arranged in positions nearly horizontal but a little inclined, and mounted on pivots so as to revolve with any required velocity. The corn is passed from a hopper thro' each of these pipes in succession, being discharged from one into the feeding end of the next, while different currents of dry air is forced through the several tubes, while the exterior is kept moderately heated by a current of steam passed through a cylindrical or other casing surrounding the tube. We suspect the inventor has not fully matured the invention in its details, but he has evidently started on a good foundation of leading principles.

Grand Improvement in Iron Manufacture.

The machinery of most of the furnaces erected within the year past, is operated by water power; but by the recent introduction of certain important improvements in which steam power has a decided advantage, it is thought it will generally be adopted in preference. At Jackson's furnace, at Westport, Mass., steam power is employed, and the advantages thereof together with those of the improvements referred to, are such that the cost of the manufacture has been reduced nearly 40 per cent. A flue is placed within the furnace chimney or funnel, and extends nearly to the top; and by this flue the hot gas and smoke is returned and brought down to the end of the steam-boiler furnace, where it passes through a perforated iron plate when it comes in contact with atmospheric air, whereby a brilliant combustion is produced, and this flame passing under the boilers, generates as much steam as is required for all the business of the furnace, and drives a mill besides. Another improvement has been projected by a gentleman connected with the iron business in Massachusetts, by which this hot gas from the furnace is first passed through a series of chambers enclosing ovens filled with wood, which is thereby perfectly charred; the gas being afterwards passed to the engine furnace, mixed with air and ignited, produces an intense flame. The wood is thus converted to charcoal without expense, and the pyroligenous acid produced in the process, is ordinarily sufficient to pay the entire first cost of the wood; thus furnishing charcoal for the iron furnace free of expense.

Æolian Improvement.

We have heretofore alluded to an improvement in musical instruments by Blodget & Horton of Akron, Ohio, and have recently received from them the following description of a recent improvement in the same. An air chamber is made on the principle of the violin or Base viol, this is made as large as the case will admit, and placed in the instrument with the sounding board underneath. It should be as much detached as possible, some small attachments being necessary to convey the air into it and also hold it firm in its place. The reeds are placed upon this chamber in such a manner that a cavity of suitable dimensions occurs between each reed and its corresponding valve. The reeds are made to fit nicely in their places, so as to exhaust the least possible amount of air. They are made to vibrate with the softest pressure, and to play any fortissimmo passage. The tones of the instrument are very pleasant but differ from the Seraphine and Melodian, being much more rich. With the blowing apparatus above described, it works perfectly; there is not the least desire to improve it in any particular. By it the performer has the most perfect control over the instrument, the same that a violinist has over the bow of that instrument, and can execute in a superior style that cannot be imitated, or equaled, on any other key board instrument now in use.

New Rotary Brick Machine.

We some time since noticed in full, the successful Cincinnatti brick pressing machine; the operation of which is very perfect, but with a reciprocating motion. We have now the satisfaction to announce an invention by Mr. John T. Plass of Brooklyn, of a new brick pressing machine which operates by a continuous rotary motion, and will form, press and turn out perfect brick as fast as four men can take them away. We have received an operating model of this machine, and shall procure an engraving thereof in a few days. The inventor has put in progress measures for securing a patent, and will forward preparations for meeting orders for the machines as early as possible.

A Fanning Chair for Summer.

Mr. Charles Horst of New Orleans, has invented and is now offering for sale, a chair which is highly spoken of as a luxury for warm climates. The improvement consists of a simple contrivance attached to a common rocking chair, which with the usual motion of rocking, is made to move a large fan that throws a current of air directly upon the head and face. The luxury of it can be tested in a moment by taking a seat in it for a minute or two. The ladies will avail themselves of this labor-saving machine.

Æolian Harp.

We have received of Mr. A. Bachelder, of Pelham, N. H., a drawing and description of an æolian harp of an improved and elegant construction and very melodious. We are not informed at what price they may be afforded, but should suppose that a few hundred of them might find a ready sale in this city. We expect Mr. B. will send us a specimen, when we shall procure and insert an engraving thereof.

Removing Incrustation in Boilers.

M. Defolse of Regent street, London, has just patented some improvements in preventing and removing incrustation in steam boilers, consisting of a compound, to be used, mixed with the water for the purpose of preventing the precipitable matters contained in it from incrusting the boiler. The substances forming this compound are first, dry tannic or gallic extract, obtained from oak, gallnuts, or any other substance yielding it; secondly, muriate of soda; third, hydrate of soda; and fourth, subcarbonate of potas. These ingredients are mixed in certain proportions, varying with the nature of the water, (which is to be first analysed, to ascertain the quantity of precipitable matter contained in it,) and also, according to the boiler, whether stationary or locomotive. For a stationary engine, the patentee recommends, for 336 hours' supply of fresh water per horse power, a compound of 12 ozs. of muriate, 2½ ozs. of hydrate of soda, 2 drachm of dry tannic or gallic extract, and half an oz. of subcarbonate of potas: but if salt water be mixed with the fresh water, or sea water be used in the boiler, then the muriate of soda is to be omitted, and 6 ozs of hydrate of soda is to be used instead of 2½ ozs, and 5 drachms of tannic extract instead of 2. For locomotive engines running on the average of 140 miles per day, the patentee increases the above proportions about one-fifth. The patentee recommends the above compound to be added at intervals—viz: a portion every two or three days—in stationary engines it may be added to the boiler at once, and in marine engines it may be mixed with the water in the boiler or in the feed tanks, but in locomotive engines it is better to mix it with the water in the tender. The patentee does not confine himself to the above proportions of the different ingredients; but what he claims is a compound of fixed alkalies, with tanic or gallic extract, for the purpose of preventing incrustation in boilers.

Prevention of Fire.

M. Cadet Vaux has made some experiments for extinguishing fires in chimneys by rendering the air mephitic. This object he obtained by the simple means of throwing flour of sulphur on the fire in the grate, the mephitic exhalation of which extinguished the fire, as it would suffocate any living creature. A Roman nobleman has not only repeated this experiment with entire success, but, being desirous of ascertaining whether an ignited body suspended in the chimney would be extinguished in the same manner, he caused a faggot to be suspended in a chimney, nearly at the summit, and set on fire; though by its situation it was nearly in contact with the external air, the flames were instantaneously extinguished by throwing a handful of flour of sulphur on the coals below.

CONSTABLEVILLE, N. Y., May 3d, 1847.
Mr. Editor.

I have seen through the "*Scientific American*" that there has been recent improvements made on the original plan of the Hydraulic Ram. In what these improvements consist, I have not yet been made acquainted. But if among them is not included an *India rubber bag* in the air chamber, I shall claim that as mine. In the use of the bags the air does not come in contact with the water, and there is a possibility of its quantity being increased or diminished, though from its increase, (were the thing possible) there might be no difficulty apprehended. But it occurs to me, that from the porous nature of water, it is possible for some part of the necessarily compressed air in the air chamber to be impressed into the escaping water, and, from the continued action of the machinery, no new air can be admitted to supply its place, so that in a space of time all the air may be discharged.

This idea of the supposed escapement of the air from the air chamber may not be philosophical or scientific. But of this much I am certain that in every case the operation, after a time, is not perfect. I constructed one last fall with a copper air chamber of the most approved workmanship, and it worked well for some weeks throwing out a constant and steady stream, but at length it filled and instead of a constant and steady stream, it emitted an unsteady and intermitting stream, showing that by some means the air had escaped. And it strikes me quite forcibly that by the use of the India rubber bag, this probably will be obviated, whether it occurred by the escaping of the air with the current of water as I have supposed it possible, or by a small aperture in the air chamber. D. W. EAMS.

NOTE.—We presume the improvement suggested by our correspondent is original; if not, we shall probably soon be informed of the fact.

Farming Utensils of the Mexicans.

The farming utensils of the Mexicans are of the rudest possible description. It has been well said, that they seem to be opposed to change of every kind, except in their governors and government. The same utensils which were used by Cortez, at the conquest, in the sixteenth century, are used at this day in Mexico.

Riding, on the 10th of December, up the valley in which Parras is situated, I came to a field where they were sowing wheat. The sower was sowing the wheat broadcast on the unploughed ground. Twenty-three ploughs followed each other, on the same land, ploughing the wheat in. A contrivance for a harrow leveled the ground after the ploughs. Each plough was drawn by two oxen. The ploughs were of the same pattern used by the Romans two thousand years since. They were made in the form of a small tree, one prong of which answered for the beam, and was cut long enough to fasten the oxen to; the other prong was cut off about four feet long, and sharpened at the end, and a single stick fastened into the fork and projecting back made the handle. This was the whole plough—lock, stock and barrel. When a forked tree cannot be found, the short stick is mortised into the long one. The short prong was the coulter—the long one the beam. This was fastened by a raw-hide thong to the ox-yoke, which in turn was fastened in front of, and to the horns of the oxen, by another raw-hide thong. The handle was held by a person, who was armed in the other hand with a long pole, with a goad in the end of it, which he unsparingly plunged into the oxen to quicken their speed, or to change their direction. Some of the better ploughs have the coulter shod with a piece of iron, resembling a bull tongue, eight inches long, and tapering from thence to two inches at the point. This is the greatest improvement made upon the plough. The ground is never thoroughly broken up and is only scratched into furrows a few inches deep. Efforts have been made to introduce better ploughs, and some have been brought from the United States. But the Mexicans did not like to use them. They were soon broken or thrown aside as useless, because no one would plough with them.

The harrow was as simple a contrivance as the plough. and consisted of a single stick of square timber, the size of a joist, fastened in two places with a raw-hide rope to keep it square to the front, and drawn by oxen to level the ground.

(*To be continued.*)

The Spider's Thread.

That any creature could be found to fabricate a net not less ingenious than that of the fisherman, for the capture of its prey—that it should fix it in the right place, and then patiently await the result, is a proceeding so strange, that, if we did not see it done daily before our eyes by the common house spider, and garden-spider, it would seem wonderful. But how much is our wonder increased when we think of the complex fabric of each single thread, and then of the mathematical precision and rapidity with which, in certain cases, the net itself is constructed; and to add to all this, as an example of the wonders which the most common things exhibit when carefully examined, the net of the garden spider consists of two distinct kinds of silk. The threads forming the concentric circles are composed of a silk much more elastic than that of the rays, and are studded over with minute globules of a viscid gum, sufficiently adhesive to retain any unwary fly which comes in contact with it. A net of average dimensions is estimated by Mr. Blackwall to contain 87,360 of these globules, and a large net of fourteen or sixteen inches in diameter, 120,000; and yet such a net will be completed by one species (*Experia apoclica*) in about forty minutes, on an average, if no interruption occurs!—*Introduction to Zoology*

Sowing Flower Seeds.

It is recommended to study and imitate nature in the sowing of various annual flower seeds. Seeds which drop in the forest are never covered deeply, but they are deposited on the surface of a bed of fine mould, and afterwards covered with a very thin coat of partially decayed vegetable matter. Flower seeds should have only a thin sprinkling of fine mould upon them. The seeds in the forest are kept moist by a shade. Fine seeds must be protected from the scorching rays of the sun, till they have obtained sufficient foothold.

Musical Ceilings.

It is said that if in building an arched room, a few bottles or demijohns be inserted above the ceiling, so that the mouth will open thro' the plastering, sound in the apartment i be greatly increased. The experiment has been tried and found to answer. We presume it will have nearly the same effect with any kind of a ceiling, and it is, at any rate, easy to try.

An Old Ship.

The ship Gen. Jackson, in this port, is more than a hundred years old, and is still in good order. She was built by the Portuguese at the Island of Goa, of teak wood. The teak planks are grooved together, and never have been caulked, but covered by sheathing. Her mizzen mast and some other spars are of teak, and undoubtedly the original sticks. Her planks and timbers may ride the waves another century, for aught that appears to the contrary.

A Huge Vine.

On a farm called West Hill, about two miles from Burlington, N. J., is a grape vine which at three feet from the ground, measures *six feet one inch* round the trunk and at ten feet is positively *three feet* in circumference! It is a native male grape, and has been the wonder of the neighborhood as long back as the memory of man reaches. It is still healthy, and its giant folds run over and cover four trees, one of which is a full sized white oak, and the others are quite large.

Drowning vs. Storming.

It has been suggested as the best method of capturing the city of Mexico, to drown the inhabitants out. The inundations to which it was formerly subjected have been of late years prevented by a large canal, which serves to drain off the surplus waters. Therefore, by a dam across this canal, and the opening of the other passages, the city may be submerged.

A solution of sulphate of iron (common copperas) in water, is a most effectual remedy for offensive odors in vaults or stagnant pools.

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NEW YORK, MAY 22, 1847.

Austin's Perpetual Motion.

We have delayed notice of this subject for two or three weeks, for the purpose of allowing ourselves sufficient time to re-peruse and examine it, to see whether the fallacy of the author's various positions could be shown to *his* satisfaction (our readers are satisfied already) in a brief and yet effectual manner, and without going into an elaborate exposition, following him through all his shifts and changes of his own plans, whereby he had vainly endeavored to escape the unavoidable conviction of the fact that every position assumed by him, is untenable. To do this, would require at least, three or four columns, as we should be required to repeat, for the purpose of exposing several of those positions. It must therefore suffice to say, that there is not one instance specified in the whole of the long and tedious description and affected demonstration, wherein there is an apparent tendency to motion of the wheel in one direction, but in which that motion would not bring the excess of pondrous material which constitutes that tendency, into a more depressed position than before, and consequently requiring a greater exertion of force to re-elevate it, than the weight of materials opposite can possibly supply. Hence Mr. A. in the progress of his description and illustration (?) was constrained to change his mode of construction, substituting a helical spring for a chain, gold or platina for lead, &c., and should he persevere in altering the construction of the mechanism at every semi-revolution of the wheel, we suppose he might make the motion thereof perpetual; but there is no position of the wheel and its appurturances yet described by him, which after producing a part of a revolution, can re-assume the original positions ~~without~~ external aid. Mr. A. is expected to send us the small compensation promised, though it will not pay one fourth of the expense of publishing his communication.

The New Postage Law.

Many and loud are the complaints of some of the most ridiculous, as well as inconvenient features of the 'backward march' improvements in the post office laws, passed by the recent sessson of sages at Washington. One of these objectionables consists in requiring three cents postage to be prepaid on all transient newspapers. The result proves what any sober man might have forseen, that instead of the 50,000 single copies of newspapers per week being sent from friend to friend as formerly, there is now sent less than 50 per week; so that the Post Office revenue will by this folly be reduced probably $20,000 per annum. But a more ridiculous clause, is that forbidding the enclosing in the same envelope, letters addressed to different persons. Now the query is, how are the deputy Post masters to know or find out what papers a close sealed envelope contains? They surely cannot discover without breaking the seal of the envelope, and if they take that liberty they will break open all letters indiscriminately, and consequently destroy the letter mail busines altogether. Surely our Congress men are greatly addicted to *absence of mind* on certain special occasions.

Professional and Mechanical Remuneration.

It is singular what wrong views men have of the rate of pay. A clergyman will receive his $1,500 and $2,000, and the Judge his $3,000, and the bookkeeper his $1,000 per annum, while the mechanic, who works twice as hard as any of them, is thought to be extravagantly paid if he gets $500 per annum.

A Good Sign.

A magistrate in Rochester was called upon to swear in a number of recruits for the army. He discovered that he had left his bible at home, and on turning to go for it, several voices said, "I have one, squire." It was found that almost every recruit present had one.

The Boston Lines.

There will be no lack of conveyance between this city and Boston during the present season. There are the two night lines, by the Norwich and Stonington routes, with two excellent boats each. The Long Island route, through by daylight: and another by way of New Haven and Springfield. There is also an evening line by the Hartford boat, and probably another by steamboat to Providence.—Besides these, a new line is opened via Fall River, which will probably be one of the most popular, as well as pleasant routes; and if a traveller is not satisfied with any of these, he can take a night line to Albany, and proceed to Boston at about the same rate of fare, or take the route of Bridgeport and the Housatonic to meet the Albany cars at West Stockbridge, and thence by the Western to Boston.

Howitzers.

It is known by all who are acquainted with the incidents of the present war, that howitzers have been used to some extent; and that the term is not generally understood, except by military men. It is a short field piece, constructed on the principle of a mortar, but mounted on a gun carriage. The bore is, then, larger and admits a small shell. To this shell is attached cannister shot. It is used and fired in the field like mounted cannon. The shells are fired like cannon balls, and when they explode, they scatter the grape shot in every direction, To be used then, on roads, or from hills, or in defiles, against troops, they are a most destructive weapon. This is the use they are put to in Mexico.

Prolonged Sport.

The best part of the Mexican forces with which Gen. Twiggs had to contend at Sierra Gorda consisted of officers and troops which had been once or twice captured by our arms and leniently released on parole. If another battle occurs in Mexico, it will be with the same men. This is like the favorite sport of a young cat with a rat, which she repeatedly suffers to escape, for the pleasure of catching it again. Or the practice (well coupled with the last example) of English fox hunters, to let go a ready ~~captured fox for the pleasure~~ of retaking it.

Puddling Iron.

Some of our readers may not know what is to be understood by the term "puddling iron"—It is simply putting pig or scraps of iron into a heated furnace, where it melts and boils, being constantly stirred until it becomes dry or hard enough to form a ball. It is then taken from the furnace, put under a heavy hammer, and made into blooms which are drawn between heavy rollers into rods or bars to suit customers.

Travelling in the Air.

It is decidedly provoking to read in a foreign journal a statement that the French Academy of Science have abandoned all hope of finding means of propelling a buoyant ærial float against the wind, and reported in favor of the foolish and exploded plan of navigating by the different currents at different heights in the atmosphere. In our humble opinion a little *common sense* is quite as essential to success in practical science, as professional honors and titles.

They Will not be Permanent.

It is stated that the two great statesmen, Webster and Calhoun, are now engaged upon great works, which are to be the crowning efforts of their lives; Mr. Calhoun, upon a treatise on the principles of Government, and Mr. Webster upon a history and exposition of the Constitution.

From what we know of the sentiments of each of these gentlemen, we are convinced that these great works will soon be uprooted and set aside by the irresistible progress of rational common sense principles among the sovereign masses of the people.

Freak of Lightning.

During the thunder gust last week, says the Cecil Whig, the lightning cut some strange antics at the railroad depot at that place. It split the pump stalk in the watering house—ran along the telegraph wire and down several of the poles, tearing them as it went, and going into the ten pin alley, made a *twelve* strike with one roll, knocking down all the pins and two of the players.

Mexico City.

The situation of this city is the most picturesque imaginable, occupying the bottom of a valley containing 1,600 square miles, the whole surrounded by a battlement of mountains, from 2,000 to 10,000 feet in height. In the centre of this vast oval basin is a lake, or rather a chain of lakes, through the midst of which the road now passes for about 18 miles, on a raised causeway, and over which an army will have to feel its way with artillery. The city stands in the northeastern quarter of the valley not more than three miles from the mountains, at an elevation of 7,470 feet. The principal square is the pride of the Mexicans and the admiration of travellers. It has an erea of 12 acres—the whole paved with most beautiful marble, and forming one of the most glorious parade grounds that American soldiers were ever summoned to manœuvre or encamp on. But it's the public buildings after all, that form the distinguished characteristic of this majestic city. The Cathedral fills one whole side of the great square, the Palace another, and the sites of both are memorable and historical; the Cathedral standing on the ground where once stood the great idol temple, and the Palace on the ground of the *Palace of Montezuma*. The latter building is 500 feet long, and contains the public offices, besides the apartments of the President. The Cathedral is of striking Gothic architecture, and after all the pressures and plunderings of these latter days, still retains immense wealth. The high altar is covered with plates of silver, interspersed with ornaments of massive gold. This altar is enclosed with a ballustrade 100 feet long, not less precious than the high altar itself. It is composed of an amalgam of gold, silver, and copper richly flourished and figured. It is said that an offer has been made to purchase it at its weight in silver, giving half a million of dollars besides. Of this ballustrade there are not less in the building than 300 feet. Statues, vases, and huge candlesticks of the precious metals, meet the eye everywhere: and yet it is said that the still more precious portion of the treasure is hidden from the popular eye Such is a brief description of the city of Mexico.

Index to the New York Municipal Gazette.

By the politeness of E. Meriam Esq., we have received a volume of extraordinary interest, under the above general title. This volume embraces seven numbers of the Municipal Gazette, and abounds with records and descriptions of meteorological phenomena and other wonders of the age which have occurred within the year past. We are not informed whether these volumes are for sale; but we hope that for the benefit of the public, the truly philosophical and philanthropical editor will forthwith publish a synopsis of the work in a small convenient volume, and we feel assured that many thousand copies would meet with a ready demand. We shall notice this work more at length, after having further opportunity to examine it.

Pernicious Papers.

A cotemporary very justly remarks that there is vastly more of corrupt literature issued and devoured in newspapers than in books. And the forms in which this corrupting literature in newspapers steals into a reading, are more insidious and deceptive. Here it comes in, it may be, in the ordinary vehicles of intelligence—in the family newspaper in connection with the news, which every body must read. And then the quantity of bad papers published and read, is many fold more than what goes out in the form of books. It would take many such establishments as that of the Harpers, to supply in books the same amount of corrupt material that now goes forth in the hundreds of thousands of newspapers and periodical pamphlets which every day sends forth.

The Southern Magnetic Telegraph.

The cities south take hold of this matter in good earnest. Columbia, S. C., has made up $8,000. The small town of Columbus, in Georgia, $6,000, and New Orleans promptly subscribed $120,000. Charleston has made up a list of more than 22,000, about one half of her allotment in the enterprise.

The fare from Boston to New York, via Springfield and New Haven, has been reduced to four dollars.

Good Society.

It should be the aim of young men to go into good society. We mean not the rich, the proud and fashionable, but the society of the wise, the intelligent and the good. Where you find men that know more than you do, and from whose conversation you can gather information, it is always safe to be found. It has broken down many a man, by associating with the low and vulgar—where the ribald song was inculcated—and the indecent story to excite laughter, and influence the bad passions. Lord Clarendon attributed his success and happiness in life, to associating with persous more learned and virtuous than himself. If you wish to be wise and respected—if you desire happiness and not misery, we advise you to associate with the intelligent and the good.—Strive for moral excellence and strict integrity, and you never will be found in the sinks of pollution or on the benches of retailers and gamblers. Once habituate yourselves to a virtuous course—once secure a love of good society and no punishment would be greater than by accident to be obliged for half a day to associate with the low and vulgar.—*Portland Tribune.*

Miss Herschell.

A letter from Hanover says that on the 16th Miss Caroline Herschell, sister, and for a long time assistant of the illustrious astronomer, celebrated the 97th anniversary of her birthday. The King sent to compliment her; the Prince and Princess Royal paid her a visit, and the latter presented her with a magnificent arm chair, the back of which had been embroidered by her Royal Highness; and the Minister of Prussia, in the name of his Sovereign, remitted to her the gold medal awarded for the extension of the sciences. Miss Herschell is herself distinguished for astronomical researches, and particularly for the construction of a selenographical globe in relief of the surface of the moon. Notwithstanding her advanced age and infirmities she still passes several hours every day in astronomical labors, and not unfrequently spends the whole night in her observatory.

Substitute for Hemp.

Gov. Call of Florida first pointed out the "Spanish Bayonet" and the "Bear Grass," as yielding a valuable vegetable fibre. It is very soft and silky, and unites delicacy with strength adapting it to fabrics of a fine texture. The fibre of the Bear's Grass is said to be coarser and very strong. This plant will yield three crops of fibre in a year. It is possible that a substitute may thus be found for a valuable article, much in use; Manilla grass.

American Seamstresses!

A New Orleans paper says there is a large clothing establishment in that city, the proprietor of which employs 500 females, and that they receive only eight cents for making a shirt and other articles in proportion.

Moose in Maine.

Forty two Moose skins were lately brought to Bangor by one man from Moose-head Lake. This animal is becoming more plenty than formerly. Upwards of three hundred have been taken within the past season.

The Cincinnati Commercial says that an establishment in that city sold, during the last season, twenty scarfs at $100 each.

To New Subscribers.

Those subscribing to the Scientific American will be furnished, if desired, with all the back numbers of the present volume. Bound together at the end of the year, they will form a handsome and valuable work.

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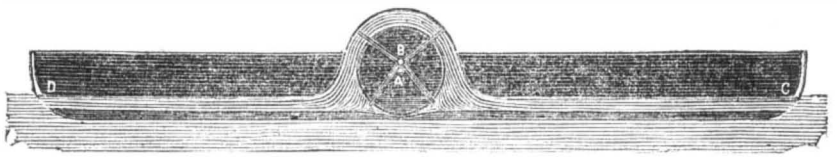
History of Architecture.

(*Concluded from No.* 34.)

The decorations of the ancient Christian churches are by no means an accidental ornament. They speak a figurative, religious language, and at the tabernacle, or *ciborium*, over the altar, where the pyx is kept, the whole temple is presented, in miniature, to the view of the beholder. In these edifices, every one must admire the accurate proportions, the bold yet regular construction, the unwearied industry the grandeur of the bold masses on the exterior, and the severe dignity in the interior, which excites feelings of devotion in every spectator. We must, therefore, ascribe to the German architecture more symbolical than hieroglyphic eloquence and dignity. The Italians disengaged themselves, by little and little, from the Byzantine taste. Even in the 11th century, Byzantine architects built the cathedral of Pisa and the church of St. Mark in Venice. But, in the 12th century, a German architect, *William* (Guglielmo), and, in the 13th, Jacob, with the surname *Capo*, who died in 1262, and his pupil or son Arnolf, are mentioned as having built churches and convents in Florence. The modern Gothic style passed from the churches and abbeys to the castles, palaces, bridges and city gates, many of which were built in this manner; for instance, in Milan, 16 city gates of marble, and several new palaces; in Padua, 7 bridges, and 3 new palaces; in Genoa, 2 docks and a splendid aqueduct; and the town of Asti, in 1280, almost entirely. Architecture was continually improving in Italy, particularly in the 14th century. Galeazzo Visconti finished the great bridge at Pavia, and built a palace which had not then its equal. About the same time, the famous cathedral of Milan was erected. The marquises of Este erected handsome edifices at Ferrara, and Albert the splendid palace at Belsiore. In Bologna, the great church of St. Petronius was begun, and, in Florence, the famous tower of the cathedral. The 15th century, in which the study of ancient architecture was revived, was greatly distinguished. The dukes of Ferrara, Borso and Ercole of Este, were active patrons of architecture.—Duke Francesco embellished Milan with the ducal palace, the castle Porta di Giove, the hospital and other edifices. Ludovico Sforza erected the buildings of the university at Pavia and the hospital of Milan The popes adorned Rome, and Lorenzo de' Medici, Florence, with splendid buildings. The artists returned to the monuments of antiquity, and studied their beautiful forms and just proportions.—The most illustrious architects of this time were Filippo Brunelleschi, who built, at Florence, the dome of the cathedral, the church S. Spirito, and the palace Pitti, besides many edifices at Milan, Pisa, Pesaro and Mantua; Battista Alberti, who wrote, at the same time, on architecture; Michelozzi Bramante, who commenced the building of St. Peter's; Michael Angelo Buonanotti, who erected its magnificent dome; and Giocondo, who built much in France, and afterwards directed, with Raphael, the building of the church of St. Peter's. These were followed by others, who proceeded in their spirit—Palladio, Scamozzi, Serlio, Barozzio, known by the name of *Vignola*.—They are the founders of the existing taste in architecture. That, however, they studied their art in those works of antiquity which had already deviated from the early purity and elevated grandeur, is evident in their buildings, from the many curved and twisted ornaments, the circular, irregular and cut pediments, the coupled columns, high pedestals, and other things, which were unknown to architecture at the time of Pericles. Thus a new period in architecture had begun in Italy.—Italian masters, and young artists sent to Italy introduced the Roman taste into foreign countries, which gradually supplanted the Gothic. Since that time, architecture has experienced different destinies in different countries. It has risen and declined at different periods;—yet laudable attempts have been made, in recent times, to advance it to its true perfection, though we cannot affirm that they have succeeded every where. In America, the pure Grecian architecture is gradually prevailing, either because this style is founded on plainer principles than the others, or because the Grecian really deserves to be called a *republican style*, since it is better adapted than the Gothic to small buildings, and does not require large and splendid edifices in order to display all its beauty.—*Mechanic's Advocate.*

THE CHANNEL PROPELLER.



Introduction.—Various plans have been introduced at different times, and some of them patented, for propelling vessels by drawing water through acqueducts from the prow of the vessel and discharging the same at the stem, by means of an apparatus on the principle of the pump. The disadvantage and loss of power by this operation, we have explained in a recent number, at the same time promising to present a plan less objectionable and even less expensive in the first instance. Such a plan we now present, but without any intention of availing ourselves of any monopoly thereof. Should our correspondents who have been engaged in the pump projects for propulsion, attach any value to this plan, they are welcome to share at least a joint interest.

Explanation.—In this cut is represented, not a side view, but a longitudinal section showing the interior of a boat with an aqueduct channel, say eight feet wide and two feet deep, extending from D to C, and passing over the wheel A B by a continuous current and without interruption, and consequently losing none of its momentum in its course. It will be seen that the wheel consists of a drum and a set of paddles or floats: and that the drum and the paddles revolve on different centres. The drum has its centre at A, and runs on a fixed axle; this axle, after passing through the sides of the drum, is bent upward in the form of a crank, the lever of which is one foot, so that the central section of the axle is horizontal and one foot higher than the centre of the drum: and on this elevated section B, the paddles are mounted independent of each other. The drum has four slots at equal distances in its periphery, through which the blades of the paddles project as they ascend from the lowest point in the circle of their revolution; and fill the channel over the drum, during one fourth of the revolution of each. The channel is thus constantly occupied by some one of the four paddles, and the whole stream of water within the channel, is arbitrarily put in motion according to the motion of the wheel, and the re-action on the boat is in proportion to the quantity of water within the channel. The power is applied to the drum by means of geer wheels, independently of the axle. A working model of this wheel may be seen at this office.

The Sugar Cane.

The mountains of Jamaica are generally crowned with numerous trees of different species, ever verdant, forming beautiful groves and coobretreats. The valleys also are usually verdant, being refreshed with many streams and adorned with plantations of choice and valuable plants, particularly the sugar-cane.

The reed or cane, which yields us such an agreeable juice, is like the reeds we generally see in morasses and on the edges of lakes, except the skin of these latter is hard and dry, and the pith void of juice, whereas the skin of the sugar-cane is soft, and the pith very juicy, though in a greater or lesser degree, according to the quality of the soil, its exposure to the sun, the season it is cut in, and its age, which circumstances contribute equally to its goodness and its bulk The sugar-cane usually grows to the height of six or seven feet, sometimes higher, exclusive of the long green-tufted leaves at the top, from the middle of which rise the flower and the seed The stalk is divided by knots or joints, whence likewise shoot out leaves; but these usually fall as the cane rises, and it is a sign that the cane is not good, or that it is far from its maturity, when the knots are beset with leaves. The cane is yellowish when ripe, in diameter about an inch.

When the canes are ripe, they are cut up one at a time with a proper instrument, being too large to be mowed by a scythe. The canes are then bundled up into faggots, and carried to the mills, which are very curious machines contrived to bruise them and press out the liquor or juice they contain. These mills are composed of three wooden rollers, covered with iron, which are of four kinds, being turned either by steam, water, wind, or cattle.

The juice pressed from the canes is conveyed through a leaden canal into the sugar-house, where it passes successively into a number of copper cauldrons, heated by different degrees of fire, by which process the juice of the canes is purified, thickened, and rendered fit to be converted to any of the kinds of sugars.

Power of Song.

Mr. Bushnell, of Utica, N. Y., a Wesleyan Methodist preacher, and zealous Washingtonian, having business in a neighboring town, was obliged in consequence to see the landlord of the village Inn, so he stopped at his house. When he entered the bar room, he saw about twenty men in it, most of whom were in a state of intoxication,—several of them quite drunk. After a little time, one of the company said something of Mr. Bushnell, who replied in a the consequently and stem of the subject of temperance. Immediately the attention of the assembly was arrested, and the cause was denounced as the work of priests and politicians.

Mr. Bushnell, finding it impossible to stem the current of abuse by an appeal to their reason, proposed singing a temperance song, to which they all agreed, and he accordingly commenced the "Staunch Teetotaller." On glancing around the room after he had concluded, he observed the tears trickling down the cheeks of almost every man. The sentiment of the song, and the melodious, touching manner in which it was sung, had awakened their purest sensibilities,—had carried their tho'ts back to their families and fireside, surrounded as they once were, with plenty, happiness and affection; and then the contrast of a drunkard's home, its dark wretchedness and misery, were wisely presented to their minds, and those hardened men could not resist the appeal, but acknowledged its truth by tears!—The song was unanimously called for again, and their wishes were gratified by its repetition. Soon after the landlord came in, and he was requested to repeat it for his especial benefit; it produced the same effect on him; and after Mr. Bushnell had concluded, he grasped him by the hand, and exclaimed, "I will never sell another glass of liquor as long as I live!" He acted immediately upon his resolution, cut down his sign post, and closed his bar,—the others promised to go to the temperance meeting that evening and sign the pledge, and they all did so except one.

RAIL ROAD INTELLIGENCE.

Air Line Rail Road between New York and Boston.

The point on which much anxiety has been felt in connection with this subject, has been settled for the present, in regard to the Massachusetts section. Notwithstanding the Legislative Committee to whom the subject was referred, was strongly influenced by the interests of the existing Railroad Corporations, the route decided on will not materially vary the distance from that of the true air line route.

This route which is the one petitioned for by Nathaniel Miller and others, commences at the terminus of the Walpole Railroad in Walpole, thence passing through Wrentham, Franklin, Bellingham and a corner of Blackstone, through the village of Waterford, in the town of Blackstone, to the west side of Blackstone River, opposite the village of Blackstone, and there intersecting with the Providence and Worcester Railroad. The length of the line to be constructed on this route is 17 miles, of which 14 1-2 are a straight line. It has no curve of a less radiance than 3800 feet, and the maximum ascent is 35 feet to the mile for 3 1-2 miles. The principal objection, if any, to this route, is the inconvenience of subjecting the immense business of this road in any measure to the domineering influence of the Boston and Providence R. R. Company. But this may be the best route nevertheless.

Great Western Rail Road, Canada.

The work on the road which was commenced, and suspended in consequence of the agitation of the Oregon question, is now resumed, and it is believed by persons familiar with the subject, that the amount subscribed $6,000,000, and partly paid in, will far exceed the amount required to finish the work. The Niagara Bridge has been commenced, and the stock to the amount of $200,000 has been taken, which is supposed to be sufficient to complete the work.

Rochester and Niagara Falls.

The whole distance from Rochester to the Falls is 81 miles, 26 miles of which road is built and in operation, and only a line of 55 miles remains unfinished, and about one half the stock for that portion of the road has been taken, say $400,000. When the road is finished, it will complete a chain of railroad from Boston to a point in Canada, opposite Detroit, Michigan, and when the Hudson and Harlem road is finished to Albany, it will make a line from New York city to the same point via Niagara Falls, and through Upper Canada.

Androscoggin (Me.,) Rail Road.

The Kennebec Journal expresses a strong conviction that a railroad will be made on the Androscoggin, from Bath to Livermore or Canton,—perhaps further up.

The Harlem Rail Road

Has been extended and put in operation to the line of Putnam County.

The Rutland Rail Road.

The work is going on at four points this side of Mount Holly, and the Mount Holly sections are to be commenced immediately. The sections in Brandon are progressing, and the remainder of the line will be immediately put under contract.

Fitchburg Extension.

It is now proposed to extend this road into Boston as soon as a convenient site may be secured and depot buildings erected.

Baltimore and Ohio Rail Road.

We learn that at a meeting of the board of directors of the Baltimore & Ohio Rail Road Company, the President was authorized to engage in a final conference with the authorities of the city of Wheeling, and to enter upon an examination of the late law of the Virginia Legislature, granting the right of way through that State, in order to ascertain the practicability of obtaining such present or prospective modifications of the law as would warrant the company in commencing the immediate extension of the road.

Summerville and Easton Rail Road.

The Commissioners appointed by the Legislature of New Jersey for the purpose of receiving subscriptions to the capital stock of the company, have made arrangements to have the route immediately surveyed and the road located, and have employed engineers for that purpose. The merits of this road are equal, if not superior, to any road now made or contemplated leading to this city. The road passes thro' the most thriving and rich parts of New Jersey, and terminates at the borough of Easton, one of the most growing and enterprising towns in Pennsylvania. Of all the roads leading to this city this promises the richest results.

Northern (N. H.,) Rail Road.

This road is expected to be completed to North Andover, a further distance of 15 miles by July next—making 33 miles from Concord. In the course of the year it is expected it will be complete to the Connecticut river, and on the other side of the river the Central Railroad in Vermont will be finished to Montpelier.—The receipts on the eighteen miles already open, have exceeded $8000 in the last 2 months, equal to 8 1-2 per cent, after deducting expenses, per annum.

Concord & Portsmouth (N. H.,) Rail Road.

After a long delay which has borne hard on the patience of those immediately interested, a forward movement has been made, the ground has been broken, and the road may be now said to be in progress of construction. We have wondered with regret at the delay in putting forward this road; for although no very great amount of business may be expected, the

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road may be cheaply constructed and will without doubt produce a nett profit of 12 per cent on the cost.

Saratoga and Washington.

The work of grading on this road, has been advanced on several sections. Large quantities of timber are now ready, and in two years the road, it is estimated, will be finished to Whitehall.

Boston and Maine Extension.

The results of the extension of this road to its present depot in Boston, have astonished its opponents, and exceeded the expectations of its proprietors. With the advantage of an independent track and good depot, its passengers have increased from 60,000 to 500,000, navigation has not suffered, and the value of property in the neighborhood of its depot has rised more than a million, and a similar advance has taken place along the line.

"Great Western" Railroad.

We learn, from authority, that eight large corps of engineers have just been organized upon this route, and it is expected that the entire line will be ready for contract, as early as August next. The surveys for the projected railway from Rochester, to intersect the New York and Erie and the Blossburg railroads at Corning have been completed.

TO CORRESPONDENTS.

"B. T. of Conn."—We are pleased with your invention, and shall present it with an engraving, and explain a difficulty which you have probably overlooked. We think the difficulty may be evaded, nevertheless. Please inform us what you will sell the invention for, as it is; or whether you will give one half for the expense of a patent and of introducing it?

"J. E. W ot N. Y."—You could not keep brokenstone in its place between and over paving stones, unless you spread it six inches deep. This has been done on several streets in Boston, and with tolerable success; but such macadamized streets are always rough and unpleasant, and in some instances as bad as common pavements. We still entertain the opinion that when a few more tides or undulations of the spleen and prejudice of the city sages have passed, wood pavements prepared in a cheap way with saline matter, will take precedence and become permanent.

"A. H. B. of Mass" ~~Your described~~ rangement of tubeing is unobjectionable;—whether it is in all points the best that could be devised, time and further experience must decide.

"A. D. W. of Maryland."—The art concerning which you enquire, appears to be but little understood by any one. The impression evidently requires protection, but we can find no person nor book that can elucidate the subject and we have no time for experiment at present, but shall write by mail in a few days, if not sooner.

"W. H. of Illinois."—The price of circular saws, at the establishment of R. Hoe & Co., 31 Gold street, is for 40 inch saws $33; 46 inch—$57; 54 inch—$110. This last is the largest size made.

"W. H. C. of Alabama."—The combined machinery which you mention, would unquestionably sustain a patent.

"D. T. of Mass"—There is nothing in the circumstances mentioned, of the trial and use of your invention, which will operate against your procuring and holding a patent thereon; but you must apply soon if ever.

"J. P. of New Hampshire."—Your favor is received and will be attended to.

"F. G. W. of Mass."—Notice in our next number.

Relief Item.

The brig Lima, Capt. Higgins, cleared at N. Orleans on the 9th inst. for Cork with a relief cargo valued at $14,000. This is the second vessel despatched by the N. Orleans committee, exclusive of $15,000 remitted to our minister at London for the same object.

Materials for Conflagration.

There is a Unitarian clergyman in Boston named *Sparks*—one in New York named *Bellows*—one in Philadelphia named *Furness*—(Furnace) and one in Baltimore named *Burnap* (Burnup.)

Fourteen companies of United States Marines, 800 strong, have been ordered to Mexico under the command of Major Twiggs.

Frnit Trees.

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The public are hereby cautioned against subscribing for the Scientific American to a person calling his name W. C. Henerie, as said individual has fraudulently obtained a certificate of agency by purporting to be engaged in a permanent business, of which we since learn he is not. Any information respecting his whereabouts will be thankfully received at this office.

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We would inform those who have been disappointed in procuring the whole of the first volume of the Scientific American, that we have recently come into possession of a few complete sets of the last half, (i. e. from Nos. 26 to 52 inclusive) which we will dispose of at the subscription price, viz. $1 per set.

OBITUARY.

On the 6th inst., and at the age of 66 years, Mrs. RUTH POOR, wife of JONATHAN POOR of Sebago, Me, (and the beloved sister of the editor of this paper) left this world of sorrow and confusion, to sleep a little while till the voice of the trumpet shall awaken the sleeping saints to bright crowns of glory, and mansions in the kingdom of God.

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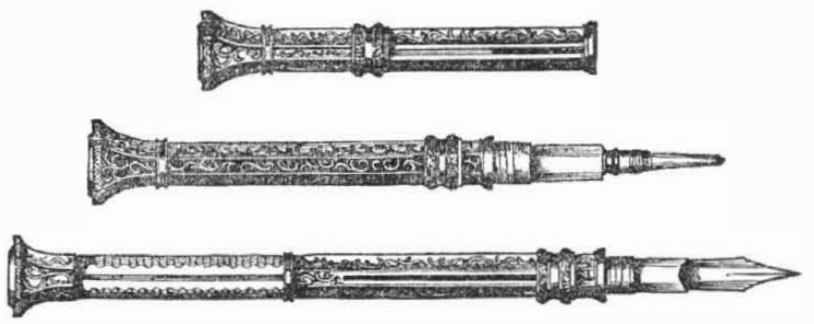

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THOMAS DADE.

STATE OF NEW YORK, CITY OF NEW YORK, SS.—On the 16th day of February, A. D. 1847, appeared before me Doctor S. B. Smith, who being by me duly sworn, did depose and say that the following certificates and extracts from letters are each and every one of them true as received from the several persons whose names are thereunto attached, and that the same are a portion of the many testimonies of the cures by his Magnetic Machine.

Affirmed before me, this 16th day of Feb. 1847.

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The Art of Painting.

(*Continued from No.* 34.)

To Enamel Picture Glasses with Gold.

The glass must be first washed perfectly clean and dried; then moisten it by breathing on it, or wet it with the tongue, and immediately lay on a leaf of gold, and brush it down smooth. When this is dry, draw any letters or flowers on the gold with Brunswick blacking, (a solution of gum asphalum with spirits turpentine) and when dry, the superfluous gold may be brushed off with cotton, leaving the figures entire. Afterward the whole may be covered with blacking, or painted in any color, while the gold figures will appear to advantage on the opposite side of the glass.—This work may be elegantly shaded by scratching through the gold with a steel instrument, in the end of which many sharp points are formed, previous to laying on the blacking.—Oil paints of any kind may be substituted in the place of the blacking, but will not dry so quick. Silver leaf may be managed in the same manner; but if coloring is required on the silver, the coloring laquers must be spread on the parts requiring it, before the silver is applied. Splendid ornaments may be produced in this way, by first drawing the outlines as described in painting on glass: and having judiciously applied the laquers, the leaf—gold or silver—may be laid over the whole as above described. Then if any fine black lines or deep shading is required, it may be effected by scratching through the leaf with a pointed instrument, and finished by a full coat of blacking over the whole: it being understood, of course, that the ornament is to appear from the opposite side of the glass.

BRONZING ON GLASS.

For this purpose the glass may be sized with a very thin coat of dilute copal varnish, and when the varnish is nearly dry, the bronze may be applied through stencils, as described in ornamental bronzing: but if the bronzed figures are to be colored, the outlines of the figures must be first drawn, and the several points stained with laquers, before the glass is sized for the bronze. After the bronze is applied, the figures may be painted with opaque or body paints, and a final coat laid over the whole If any fine lines of bronze are required in the finishing, the paint may be scratched through with a point as before described, and these lines being slightly sized, the bronze may be applied to the lines without a stencil. The most beautiful figured borders may be formed by means of stencils finely cut for that purpose, the bronze being applied through the apertures: and such border figures may be further beautified by having fine line figures drawn with a point through the bronze, prior to the final coat of black, by which the work is finished. The practitioner will find in this branch, a field for an infinite variety of beautiful fancy work, which will afford both amusement and utility.

TRANSPARENT PAINTING ON CAMBRIC.

This art is extensively practised in painting screens and window shades. The cambric or muslin is prepared by being stretched on frames of convenient size, being secured by tacks at the edges, and sized with a mixture of fine flour paste, white glue and white bar soap, in the proportion of one pound of flour to four ounces of glue and five ounces of soap. The soap must be of the white or transparent kind, and serves to soften the other ingredients and render the cloth pliable and elastic. The flour is first made into paste, and while hot, the soap is added, with a few drops of essence of cinnamon, essence of lemon or lavender, to prevent unpleasant perfumes. The glue is to be dissolved by itself, and then the whole is mixed together, and diluted with water till it will work freely with a common paint brush, while cold. A thin sizing is spread on the work side of the cambric: and if the sizing is well proportioned and applied, it will be nearly invisible when dry. A coat of pure linseed oil, diluted with an equal quantity of spirits of turpentine, may be applied to the whole surface, or only such parts of it as are intended to receive the coloring; it must be applied quickly and uniformly, that the transparency may be equal in all parts; and if a little copal varnish be mixed with the oil it will be the better. The frame, with the cambric, must be placed between the artist and the principal light, that the lights and shades may be seen distinctly during the process of painting. The colors used in this branch, generally consist of Ivory Black, Prussian Blue, Ultramarine, Paris Green, Crystals of Verdigris, Gamboge or Turmeric, Lake, Umber, and Burnt Umber, Terra de Sienna and Burnt Terra de Sienna, and Gum-asphaltum or Brunswick Blacking. (The Turmeric is prepared by steeping it in alcohol, and straining off the liquor, which may be then mixed with oil or varnish.) These colors are ground in oil, diluted with spirits of turpentine, to which may be added a little drying japan or white vitriol, to hasten the drying of the colors. An outline of the design is drawn with a hair pencil with dilute umber or ivory black; after which the colors are applied, more or less dilute, as more or less transparency is required. In general, the brightest colors should be applied first, and afterward the darker shades or colors. The operator will find it requisite to turn the work-side to the light occasionally, to see whether the opaque surface of the coloring and shading corresponds with the transparent view; for it is the peculiar property of good work of this kind, to appear equally well in a transparent or opaque view, In regulating the shades for the purpose, it is sometimes requisite to mix white lead with the colors, which increases the shade in the transparency, while it reduces it in the opaque. Stencils, in sets made to match, are used with advantage in this branch, especially in the formation of borders and scroll embellishments The colors must be applied with soft brushes, and laid smoothly; and if any part receives too dark a coloring, the only remedy is to scrape off the paint from such parts before it is dry. The best designs for window shades, consist of landscape views, and should be always designed to accommodate the form and position of the ground on which they are drawn. With regard to the rules of coloring and shading landscape views, we must refer the reader to our next number.

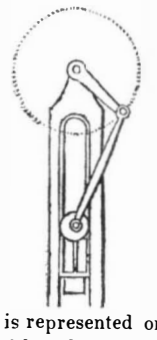
(*To be continued.*)

Enameling Cast Iron.

This invention consists in enameling the surfaces of certain cast iron articles. The vessel of cast iron required to be glazed and enameled, must first be well cleaned; it is then ready for the application of the enamel, which is composed of two coats, one forming the body, and the other producing the glaze. The first composition is made by fusing 100 lbs of calcined flints, ground to fine powder, with 75 lbs. of finely pulverized borax, and then grinding 40 lbs. of this mixture with 5 lbs. of potters' clay, in water, until it is brought to such a consistence that, when the cast iron vessel is dipped into the composition, it will receive a coating about one-sixteenth of an inch thick. As soon as the coating, thus applied, has become set, and while it is yet moist, the second composition, which is in a finely pulverized state, is sifted over it. The second composition is formed by mixing together 100 lbs. of Cornish stone, ground to a fine powder, 117 lbs. of finely ground borax, 35 lbs of soda-ash, 35 lbs. of salt-petre, 35 lbs. of sifted slacked lime, 13 lbs. of white sand, and 50 lbs. of well pounded white glass, and vitrifying the mixture; when cool, it is ground very fine in water, and afterwards dried; 45 lbs. of the powder and 1 lb. of soda-ash are well mixed in hot water, by stirring; and the mixture being then dried in a stove, a fine powder is produced, which constitutes the second composition. When this powder has been very evenly sifted over the first composition, the cast iron article must be put into a stove kept at a temperature of about 212° Fahr., in order to dry the composition; after which, the composition is fired, by placing the article in a kiln or muffle, kept at the temperature requisite to fuse the glaze. If the article is found to be imperfectly glazed, when withdrawn from the kiln, some of the glazing composition is again sifted over it, and it is replaced in the kiln until the glaze is fused.

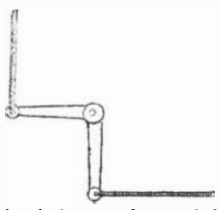
For coating the inside of iron pipes, over which the glaze-powder cannot be conveniently sifted, on account of their length or small diameter, the patentee proceeds in the following manner:—When the inside of the pipe has been cleaned, he pours the first composition through it, turning the pipe round at the same time, to insure an even coating upon every part; after this has become set, he pours the second composition through in a similar manner, and then fires it in a kiln, as above mentioned. Patent granted to TIMOTHY KENRICK, of the county of Stafford, England.

MECHANICAL MOVEMENTS.



In this cut is represented one of the most simple and useful modes of converting the circular motion to a rectilinear motion, and vise versa, and that without any material friction. Two upright bars are represented, between which is a sliding frame (sometimes called a gate) which in its vertical reciprocal motion, is guided by these bars, and to prevent friction, has a pulley or friction roller attached to the end thereof. This sliding frame is connected by a *pitman* or *shackle-bar* to the end of a crank-lever, attached to a horizontal revolving shaft. The dotted circle describes the motion of the pitman head round the shaft.—Suppose the sliding frame to be attached to the piston of a steam engine, and the crank attached to the shafts of a pair of paddle wheels, then a rotary motion is produced by the rectilinear; but reverse the supposition, and let the sliding frame be the saw-gate of a saw-mill, and the crank attached to the shaft of a water-wheel, and we see the rectilinear motion produced by the circular or rotary. When the machinery is nicely adjusted, there is no power lost in the application of the rectilinear to produce a rotary motion.

The Bent Lever.



This device is frequently used for changing the direction of forces, where but little motion is required. For example; if a certain power or force is operating in an eastern direction, and is required to produce a draught or force in a northern direction, recourse is had to something on the principal of the bent lever; the forces being applied to the ends of the two prongs of the bent lever, the fulcrum being at the angle; or rather, to one of the prongs, and through the other to the object to be drawn or held fast. This bent lever is neither more or less than a section of a pulley wheel, for every pulley consists of a solid combination of bent levers, the fulcrum being in the centre. In all motions of the bent lever, each prong moves in a curve corresponding to the periphery of a wheel, the prongs being the radii thereof

Composition Ornaments.

Thousands have admired the perfection of the figures produced by the looking glass and picture frame manufacturers, on the corners and other parts of their elegant gilt frames; but the art has been kept so close a secret among the craft, that not even the apprentices of the trade have been allowed to know the secret of this peculiar art, till near the expiration of their term of apprenticeship. We shall here describe the whole process as practised by the best burnish-gilders at the present time. The composition becomes nearly as hard as stone, and the art will furnish an agreeable amusement to many, who are not connected with that branch of business.

PROCESS.—Dissolve one pound of glue in one gallon of water; in another kettle boil together two pounds of rosin, one gill of Venice turpentine, and one pint of linseed oil. Mix all together in one kettle, and continue the boiling, stirring them together till the water has evaporated from the other ingredients: then add finely pulverised whiting till the mass is brought to the consistence of soft putty—This composition will be hard when cold; but being warmed it may be moulded to any shape by carved stamps or prints; and the moulded figures will soon become dry and hard, and will retain their shape and form more permanently than carvings of wood.—They may be fastened with common glue on either plain surfaces or mouldings.

To make Letters or Flowers of Blue on Polished Steel.

Hold the steel over a charcoal fire till it becomes blue—let it cool. Then with equal parts of rosin and beeswax, melted together, colored a little with lampblack, and diluted with spirits of turpentine so as to work freely with with a camel hair pencil—draw any letters or figures on the steel while it is a little warm.—When the steel has become cold, wash it over with muriatic acid, diluted with two parts of water, to one of acid; thus take off the blue color, and then wash it with clear water. Afterward the varnish, being warmed a little, may be readily washed off with spirits of turpentine, and the letters or flowers will remain blue. If letters are formed on polished steel with this varnish, and the body of the metal be all covered with it, excepts a small space round each letter, and then bathed with muriatic acid, the space round the letters will become a dull iron color, while the letters and body of the steel will retain their polished surface and brilliancy.

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